

I claim AS MY INVENTION

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Patent Claims

1. Method for coupling an ATM communication layer to a plurality of N mutually time-independent time-division multiplex communication terminals having an overall payload cell rate CR_N , comprising the steps:

- 5 -- generating a control signal sequence with a clock rate corresponding to the overall payload cell rate CR_N of the N time-division multiplex communication terminals, whereby the control signals can represent a first or a second status;
- offering a fixed data pattern;
- 10 -- transmitting the ATM cells coming from the ATM communication layer into an ATM cell waiting list;
- transmitting, on demand, an ATM cell from the ATM waiting list to the requesting time-division multiplex communication terminal when the respectively oldest control signal of the control signal sequence represents the first status, and transmitting the fixed data pattern to the requesting
- 15 time-division multiplex communication terminal when the oldest control signal of the control signal sequence represents the second status; and
- deleting the oldest control signal of the control signal sequence.

2. Method according to claim 1, characterized in that a control signal that

20 represents the first status is allocated to each ATM cell of the ATM waiting list in the control signal sequence, and whereby, when a new control signal of the control signal sequence is generated in coincidence with the prescribed clock rate, a check is carried out to see whether an ATM cell to which no control signal representing the first status is allocated is still present in the ATM waiting list, and a control signal representing

25 the first status is generated in this case and, otherwise, a control signal representing the second status is generated.

3. Method according to claim 1 or 2, characterized in that the control signal representing the first status is represented by a logical "1" and the control signal representing the second status is represented by a logical "0".

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4. Method according to one of the claims 1 through 3, characterized in that the control signal sequence has a length of up to $3 \cdot N$ signals.

5. Method according to one of the claims 1 through 4, characterized in that a cell transmission from the ATM communication layer into the ATM waiting list is enabled when the plurality of ATM cells present in the waiting list minus the plurality of control signals of the control signal sequence representing the first status is $\leq X$.

6. Method according to claim 5, characterized in that $X \geq 1$ applies.

7. Method according to claim 6, characterized in that $X = 1$ applies.

8. Method according to one of the claims 1 through 7, characterized in that the N time-division multiplex terminals are uncorrelated.

9. Method according to claim 8, characterized in that the ATM cells and the cells containing the fixed data pattern are divided onto the N communication terminals according to the round robin method.

10. Apparatus for coupling an ATM communication layer to a plurality of N mutually time-independent time-division multiplex communication terminals having an overall payload cell rate CR_N , comprising:

- a means for generating a control signal sequence with a clock rate corresponding to the overall payload cell rate CR_N of the N time-division multiplex communication terminals, whereby the control signals can represent a first or a second status;
- a means for offering a fixed data pattern;
- a means for transmitting the ATM cells coming from the ATM communication layer into an ATM cell waiting list;
- a means for transmitting an ATM cell from the ATM waiting list to a requesting time-division multiplex communication terminal when the respectively oldest control signal of the control signal sequence represents the first status, and transmitting the fixed data pattern to the requesting time-division multiplex communication terminal when the oldest control signal of the control signal sequence represents the second status; and

a means for deleting the oldest control signal of the control signal sequence.

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